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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/711,277

09/07/2004

Wade Chute

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09/12/2006

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CANADA

EXAMINER

KINNEY, ANNA L

ART UNIT

PAPER NUMBER

1731

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/711,277

Applicant(s)

CHUTE ET AL.

Examiner

Anna Kinney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed July 13, 2006 have been fully considered but they are not persuasive.

In response to applicant's argument that Hurter does not disclose desilication at the pre-pulping stage, the Examiner disagrees. The applicant has not defined pre-pulping. The Examiner construed pre-pulping to be equivalent to the mild alkaline extraction stage of Hurter et al, since the steps and conditions are not patentably distinct. However, even before the mild alkaline extraction stage, Hurter also discloses a fiber preparation stage including hydropulping (i.e., wet pre-pulping) the nonwood plant fiber (Fig. 1, item 14), removing solids by dewatering (Fig. 1, item 26), removing solids from the filtrate (Fig. 1, item 28), and reusing the filtrate in the pre-pulping step (Fig. 1, item 32 and "Dilution water"). El Shall was applied to show treatment of the filtrate.

In response to applicant's argument that El Shall discloses desilication from the filtrate of the alkaline extraction of lignin, and that the claimed step does not include elevated temperatures and pressures required for such alkaline extraction of lignin, the Examiner disagrees. The independent claim does not recite any conditions which patentably distinguish over alkaline extraction. In fact, based upon the ranges recited in dependent claims 4 and 5, the claimed pre-pulping step would extract lignin from the nonwood plant fiber. In addition, El Shall discloses that the composition of used or spent digestion liquors vary with the reagent chemicals used, the raw material, and the

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particular mill concerned (col. 2, line 66 – col. 3, line 2); that waste liquor from semi-chemical or lesser intensity chemical pulping can be processed somewhat differently in accordance with the skill of the art (col. 10, lines 43-46); that raw materials of annual vegetable origin (i.e., nonwood plant fibers) normally contain a relatively high percentage of silica, which is solubilized in the digestion liquor (col. 3, lines 3-7); and provides for precipitation of silica (col. 9, lines 42-46). Absent a showing of unexpected results, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the method of El Shall with any alkaline filtrate to remove dissolved silica.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hurter et al (U.S. Patent 6,302,997) in view of El Shall (U.S. Patent 6,632,327).

With respect to claim 1, Hurter et al discloses a process comprising: (a) wet pre-pulping the nonwood plant fiber (col. 6, lines 61-65 or Fig. 1, item 14) under controlled conditions of temperature (col. 7, lines 42-46), solids content, and pH (i.e., dosage; col. 7, lines 5-40); (b) removing both suspended solids and dissolved solids from the fibrous portion of the pre-pulped material by filtration and dewatering (i.e., washing; col. 7, lines 57-59 or Fig. 1, item 26), and reusing the filtrate in the pre-pulping step (col. 11, line 61 -

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col. 12, line 1 or Fig. 1, item 32 and "Dilution water"). Hurter does not disclose expressly precipitation of silicate from the filtrate.

El Shall discloses adding acid to the filtrate (col. 4, lines 48-51) to force the precipitation of solubilized silicate; and (d) removing the silica and other solids from the filtrate (col. 4, line 56 – col. 5, line 4).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to acidify black liquor filtrate and remove silica as described by El Shall in the pulp production process of Hurter to obtain the invention as specified in claim 1.

The motivation would have been that acidification of the alkaline spent digestion liquor produces a gelatinous or gummy mass that cannot be separated from the liquor in a practical manner.

With respect to claim 2, Hurter discloses that the resulting nonwood plant fibers are subsequently pulped mechanically (Fig. 2, item 46), then bleached (Fig. 3, item 70).

With respect to claim 3, El Shall discloses that the precipitated silica is used as a raw material for other applications (e.g., a solid product having value; col. 5, lines 26-29).

With respect to claim 4, Hurter discloses that the fiber is wet pre-pulped at a pH of about 7 or greater (e.g., alkaline; col. 6, line 61 – col. 7 line 59), which contains one specific point within the claimed range of about 7 to about 11.

With respect to claim 5, Hurter discloses that the fiber is wet pre-pulped at a temperature of from ambient temperature to about 150°C, and preferably from about 50°C to about 140°C, more preferably from about 80°C to about 120°C (col. 7, lines 42-

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46), which contains 2 specific points within the claimed range of about 50°C to about 90°C.

With respect to claim 6, Hurter does not disclose expressly the solids content of the fiber during wet pre-pulping. (The Examiner construes the phrase "solids content" to indicate consistency.) However, Hurter does disclose that the source material consistency ranges from about 3% to about 10% (col. 21, lines 1-3); after the alkaline step Hurter discloses a consistency of about 5 to 10% (col. 13, lines 12-14); and during acid treatment of the pulp, Hurter discloses a pulp consistency of about 3 to about 10% (col. 13, lines 24-27). At the time of the invention, absent a showing of unexpected results, it would have been obvious to a person of ordinary skill in the art to optimize the solids content during the wet pre-pulping step to achieve a minimal number of dilution and thickening stages (col. 2, lines 27-28). It has been held that discovering the optimum or workable ranges or an optimum value of a result effective variable involves only routine skill in the art. See MPEP 2144.05 II.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna Kinney whose telephone number is (571) 272-8388. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ALK


ERIC HUG
PRIMARY EXAMINER